Antecedents of idea selection

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CREATIVITY: SYSTEMS THEORIES

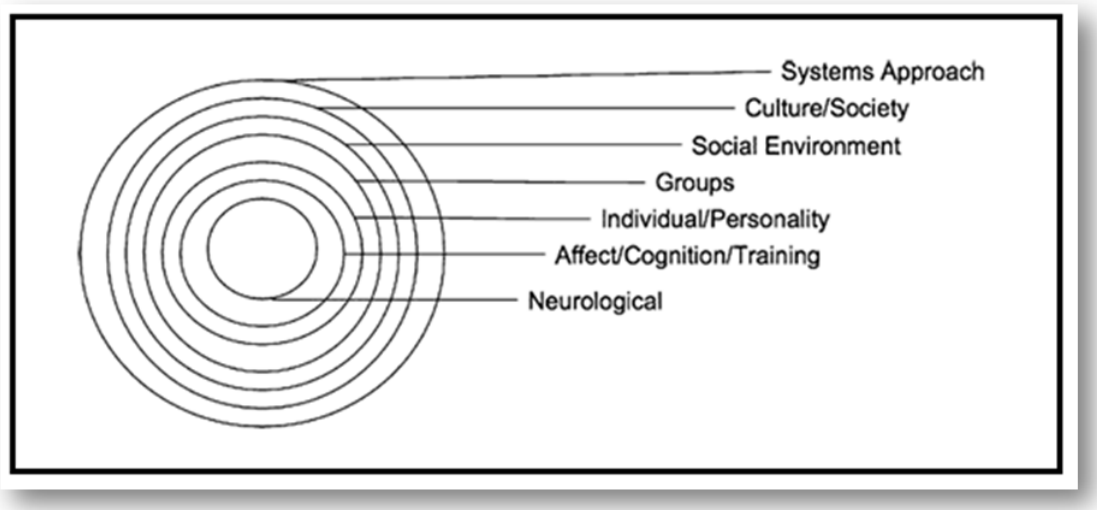

Figure 5-2 - The increasingly large concentric circles in this simplified schematic represent the major levels at which creativity forces operate. (Hennessey & Amabile 2010, p. 571)

`What we need now are all encompassing systems theories of creativity designed to tie together and make sense of the diversity of perspectives found in the literature - from the innermost neurological level to the outermost cultural level.' (Hennessey & Amabile 2010)

Annual Review of Psychology, 2010

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Abstract

Purpose:

Working on generating and implementing valid and workable ideas in organization has had my interest for a long time, and the interest of scientists like Teresa Amabile, Jing Zhou, Christine E. Shalley and many others. This study is based (system approach) on Weick (1979) his variation/enactment – selection – retentions theory, Amabile (1983) her componential theory of creativity , Zhou (1998) her model on effects of feedback on creativity and KEYS (Amabile, Conti, Coon, Lazenby, & Herron 1996a).

This study focusses on the antecedents feedback, presence of co-actors, climate and culture and work environment. The recipients have provided information about the feedback and the climate and culture on idea selection in the organization. The question about four antecedents of idea selection will be answered through testing relations. The study is done in 2015 in a small private banking (N = 201) organization.

To make sense of all the information, individuals can use the variation/enactment-selection-retention loop of Weick (1979) with the feedback loops built in. Through this sense making process the individual is trying to understand the information received from the environment. Both main theoretical models (Componential theory of creativity from Amabile and theoretical framework for understanding creativity in complex social settings from Woodman, Sawyer, & Griffin (1993)) in the field of organization creativity emphasize the importance of the social and contextual influences from the environment. In 35 years research many antecedents of creativity have been found and studied.

In organizational setting the influences on the recipients are numerous. Amabile (1983) divides them, in her componential theory, in an external component (work environment) and an internal component (intrinsic motivation, domain-relevant skills and creative-relevant skills). Both external and internal components have influences on the creative process which is problem identification, idea preparation, response generation and response validation which lead to creative outcome (idea selection in this study).

Reasearch revealed that feedback has a powerful impact on individuals creativity. A model of feedback on creativity from Zhou described the nature and component of feedback, the characteristics of the feedback giver and the feedback recipient which can lead through psychological mechanisms to the behavioral outcome creativity. This is not as easy as it seems. Through the variation/enactment – selection – retention model, the individual is trying to make sense of the information they receive. Feedback is source of information but not the only one.

In this study the perceptions of recipients about idea selection and the environment are investigated by using questionnaires. These validated questionnaires involves idea selection, feedback, creative work involvement (CWI), perceived organization support (POS), issue selling, Innovative Work Behavior (IWB) and work pressure (KEYS).

Four possible antecedents of Idea selection will be studied:

Hypothesis A: Creative work involvement is positively related to idea selection

Hypothesis B: Issue selling is positively related to idea selection

Hypothesis C: Feedback is positively related to idea selection

Hypothesis D: Idea promotion and idea realization is related to idea selection

Method

In this study the model antecedents of idea selection is tested with measurement scales adopted from existing studies. Data was gathered in a single time correlation study in a small private bank (N = 201). The climate and culture of the organization will be measured with the questionnaires Perceived Organization Support (POS), Innovative Work Behavior (IWB), Creative Work Involvement (CWI), Workload pressure (KEYS) and Issue selling which are provided by Heidi Lenaerts for which I am grateful.

Results

The questionnaire was distributed in January 2015. We received 30 valid responses, the response rate was 14.9 %. Unfortunately the received valid questionnaires were not representative for the population of this organization. The difference in i.e. Age (age group > 55 years = 20 %. In population 11.4 %) and Education (bachelor 53.3 %. In population 20%) is too great.

From the results of the questionnaires the model could not be tested with parametric statistical analyses, because those requires a normal distribution. From the sample size, Q Q plot and correlation it is clear that the data are not evenly distributed. Other statistical test like Spearman,

Mann-Whitney and Kruskal Wallis can be used, although the outcome is less powerful than correlation and regression.

The model " antecedents of idea selection" started with the idea to investigate with the means, correlations and regressions. With the Spearman's Rho the relation, formulated in the hypothesis, for creative work involvement(.594), issue selling(.567) and idea promotion(.543) were tested to find that these relations were supported. An unsupported(.162) relation was found for feedback. Further investigation for feedback was required. The non parametric significant values of the Mann-Whitney test of innovative work behavior , issue selling and creative work environment are confirmed in the Kruskal-Wallis test. These tests confirm a low similarity in populations for the three work environmental antecedents and the antecedent feedback and confirm hypothesis C as unsupported.

Answer to the question:
Antecedents of idea selection. In particular, what is the relationship between idea selection and creative work involvement, issue selling, feedback, idea promotion and idea realization?
Idea selection is about the openness to, selection, adaption and realization of ideas and is part of the organizational creativity field. Idea selection can be measured more in detail than creativity and can be helpful to gain insight in the creativity process From the questionnaires we have found a supported relation between creative work involvement, issue selling, idea promotion and idea selection. Because the relation between feedback and idea selection was weaker than expected from the literature study we made a model connecting feedback and idea selection measuring the similarity of the populations. The outcome of this case study is that the similarity of the populations is low and confirms the outcome of the Spearmans Rho. For more insight coherent models of antecedents can test the relations with idea selection using different antecedents at different organization levels in different models.

Other antecedents are identified: leadership, diversity, goal setting, task structure, social network, different supervisory behavior, presence of creative role models, presence of competitive others, autonomy, rewards and individual differences of individuals.

The implications are that we still want to make more sense of the diversity of perspectives of the antecedents of creativity. Insight in the creativity process in organizations can and will stimulate creativity and might decrease obstacles. Used at the right time, the right place, the right qualified persons and with organizational support, more insight in the antecedents of creativity might enhance the quantity and the quality of idea selection and increase the level of continuity of organizations.

1 Introduction

This study invites you to think about generating, discussing and implementing workable ideas into organizations. Ideas can, for instance, improve corporation, motivation, knowledge, processes, sustainability and finances.

More than 35 years of organizational creativity researches how the antecedents of creativity in organizations at different levels jointly affect creativity. Amabile (1983) composed the componential theory of creativity from her research designed to be useful for psychological and organizational creativity research. In this theory internal and external components affects the creative process (creative cognitive processing) which affects the creative outcome. Zhou (1998) researched, composed on the componential theory of creativity and Cognitive evaluation theory from Deci and Ryan (1985), a model of effects of one of the antecedents of creativity feedback. Cognitive evaluation theory deposits that there are two psychological antecedents of intrinsic motivation: perceived competence and self-determination. In her model, Zhou connects the nature and component of feedback, characteristics of feedback recipient and feedback giver through psychological mechanisms to the behavioral outcome creativity. The work environment for creativity was accessed by developing and validating a new instrument (Amabile et al., 1996a): KEYS. These theories will be described more in detail in the literature.

The definition of creativity connects climate and culture and feedback with creativity. Creativity is defined as follows: “Creativity and innovation at work are the process, outcomes, and products of attempts to develop and introduce new and improved ways of doing things. The creativity stage of this process refers to idea generation, and innovation refers to the subsequent stage of implementing ideas toward better procedures, practices, or products. Creativity and innovation can occur at the level of the individual, work team, organization, or at more than one of these levels combined, but will invariably result in identifiable benefits at one or more of these levels of analysis” (Anderson, Potočnik & Zhou, 2014 page 1298).

One of the antecedents of creativity is feedback. Looking at the effects of feedback on creativity and the componential theory of creativity there are a lot of influences on the process of feedback on idea selection i.e. external component (work environment), internal component (domain-relevant skills), group process, leader facets and influence , the creative process and the creative outcome. In this thesis we will not investigate all the influences on the effects however we can look into one significant element of feedback: the characteristics of the feedback recipient. “…..the topic of

leading for creativity has received increasing attention in the literature by those attempting to conceptually and empirically formulate what it means to lead in a creativity context" (Tierney ,2008 page 95). We will investigate the difference in frequency if the feedback is provided by the supervisor or by the peers. Feedback takes place in interaction with co-workers and leaders. Workers and leaders are working together in an organization with their specific climate and culture. The antecedent climate and culture will be researched to determine the climate and culture for innovation in the organization.

Subquestions

1. What is the correlation and non parametric tests of antecedents on idea selection?
2. What is the climate and culture in the organization for creativity?
3. What are antecedents of idea selection? In particular, hat is the relationship between idea selection and creative work involvement, issue selling, feedback, idea promotion and idea realization.

In this study we will investigate antecedents for creative outcome in terms of idea selection. Furthermore we will look at how the climate and culture in the organization is related to creative outcome.

2. Literature review and formulating hypothesis

In our literature study the influences on the creative process, the componential theory, the feedback process and the idea selection process as well as climate and culture of organizations will be described. The literature study will provide a synthesis of the scientific research in the fields which are related to the model "antecedents of idea selection" and will provide an empirical base for the methodology.

2.1 Field of organizational creativity

One model that deserves attention is the Variation/Enactment – selection – retention model. Bedeian and Wren (2001) polled members of the Fellows Group of management and asked them to vote on the 25 most influential books of the 20th century. The purpose was to provide scholars a list of books that have a major impact in the field of management due to their progressive thinking. Creativity received little explicit attention in these books, however the book which was voted the best of the rest is interesting for our study. Ford and Kuenzi (2008) offered a brief description of Weick's (1979) book titled "The Social Psychology of Organizing" in which his variation/enactment-selection-retention model is described. Environmental changes influence recipients perception of uncertainty in their environment. These signals are equivocal and require recipients to make sense of their environment. Enactment is a term used by Weick to describe Darwinian variation process, as previous described by Campbell (1960). Enactment is the process through which recipients interact with their environment. Selection is the point in the process in which meanings and interpretations are preserved for future use. Retentions are the repositories of previously created and enacted solutions. The model has three feedback loops: Ecological change and enactment. Enactment is linked to selection. Retention is linked to selection and enactment through two additional feedback loops. Recipients/individuals are trying to make sense of the world around them with all the information through the variation/enactment-selection-retention and the feedback loops built in.

Componential theory of creativity and innovation

There are two main theoretical models in the field or organizational creativity. First Amabile (1996) her componential model of creativity and innovation and second Woodman et al. (1993) their interactionist perspective of organizational creativity model. Both models have in common that they give importance to the social and contextual influences for employee creativity. In the componential theory, the influences on creativity include three (internal) components within the individual - the domain-relevant skills, creativity-relevant processes and intrinsic task motivation and one(external) component outside the individual – the environment. Domain-relevant skills include knowledge, expertise, technical skills, intelligence and talent in the work field. Creative-relevant processes (originally called creative-relevant skills) include cognitive style and personality characteristics that are conductive to independence, risk taking, work style, and skills in generating ideas. Intrinsic task motivation is the motivation to undertake a task or solve a problem because it is interesting and involving rather than extrinsic motivation which comes from rewards, surveillances, competition, evaluation or procedures. Both external and internal components have influences on the creative process which is problem identification, idea preparation, response generation and response validation which lead to creative outcome (idea selection in this study).

2.2 Antecedents of organizational creativity

Research on organizational creativity as a subarea in the field of organizational behavior, started actively in the late 1980s. In recent years, experienced scholars in psychology and in management have devised ingenious methods for studying organizational creativity in a broad range of domains and have demonstrated systematic influences on creativity: (Amabile et al., 1996a; Zhou , 1998; Calister, Kramer, & Turban, 1999; Stobbeleir, Ashford, & Buyens, 2011; Caniëls, Stobbeleir, & Clippeleer, 2014) and many others. The antecedents which are identified are leadership, feedback, diversity, goal setting, task structure, climate and culture, social networks, different supervisory behavior, presence of co-actors, presence of creative role models, presence of competitive others, autonomy, rewards, contextual factors from work environment and the individual differences of individuals. Many of the studies have tried to identify the antecedents and factors that facilitate or hinder individual creativity in organizations to gain more insight in organizational creativity.

Other studies have and this thesis will focus on the antecedents feedback, presence of co-actors (peers and supervisors), climate and contextual factors from work environment. In their study Caniëls et al. (2014) refer to the rising agreement, according to West and Richter (2002) among scholars that co-workers and team processes play a key role in stimulating creativity. From the study the antecedents of creativity revisited: A process perspective "…third, respondents indicated that other people can act as a critical sounding board and are used to provide feedback, structure and completeness of the idea" (Caniëls et all., 2014 page 102). This is a feedback loop in the variation/enactment – selection – retention model of Weick (1979). Looking at the stimulants and the obstacles described by Amabile et al. (1996a) in appendix A research in creativity is a complex task. The existence of the field of organizational creativity and the prioritizing of idea selection in organizations is an important indication that creativity is an important subject in organizations for researchers, supervisors and peers gaining insight and advances for their organization.

In the literature database of the OU more than 6.000 articles can be found with creativity in the title in the fields business, economics, psychology, science and sociology. An interesting aspect of creativity is the idea selection. In the same database 23 articles can be found with idea selection in the title. This is an indication that there has been a limited number of investigations in this subject. Hence, we will adopt idea selection as our dependent variable.

In the field of organizational creativity a number of antecedents of creativity have been found. Amongst the antecedents there are creative work involvement, issue selling, feedback, idea promotion and idea realization. In the definition of Anderson et al. (2014) creativity is described as the creativity stage of this process of creativity refers to idea generation. The four antecedents will therefore be taken into account as independent variables. Below we will discuss each of them in relation to idea selection.

Independent variable Creative work involvement

A creative work environment encourages recipients to be creative.

In their study Amabile et al. (1996a) state that a few scholars have attempted to assess quantitatively the work environment for creativity. In their conceptual model underlying assessment of perception of the work environment for creativity, encouragement of creativity, autonomy of freedom, resource, pressures and impediments to creativity are transformed in scales for assessing the work environment (KEYS environment scales)

For her hypothesis 1a, 1b and 1c Amabile refines the scale encouragement of creativity in organizational encouragement, supervisory encouragement and work group supports .Amabile mentions in the outcome that their studies have revealed that encouragement can occur in the work groups themselves, through supervisory encouragement and the encouragement of risk taking and idea generation. The results of the tests of the validity of KEYS indicated that, although high- and low creativity-projects are statistically different, amongst others organizational encouragement and group support discriminate most strongly. This indicates that there may be a strong positive relation in encouragement of creativity.

Hypothesis A: Creative work involvement is positively related to idea selection

Independent variable Issue selling

In their study, Dutton, Ashford, O'Neill and Lawrence (2001), the researchers suggest that knowledge about the "how" of issue selling require both skill in interpretation and a "feel for the game" being played inside an organization. In their study Amabile et al. (1996a) (KEYS questionnaire freedom) suggest that freedom in what work to do and how to do it is important. Issue selling indicates the sense making of the recipients how free they feel to promote an idea.

Hypothesis B: Issue selling is positively related to idea selection

Independent variable Peer and supervisor feedback

Impact of feedback

Several researchers, (Zhou, 1998; George & Zhou, 2001; Zhou, 2008), refer to research that indicates that feedback has a powerful impact on individual's creative performance. In her study Amabile (1993) stated that performance evaluation and feedback systems are evolving. In their study Callister, Kramer, & Turban (1999), the researchers examined how inquiring and monitoring for feedback changed over time (for transferees). Today, the organizations are changing so rapidly that this research not only applies for transferees but for all individuals, especially in the private banking sector. In their review Anderson et al. (2014) are referring to the gap which lies in theorizing on cultural differences and creativity in the organizations of today with the different cultures and ethnicities working together.

Impact of feedback on individuals

In her model on effects of feedback on creativity Zhou (2008) relates to the feedback and intrinsic motivation, feedback as a source of standard, and feedback as acquisition of creativity skills and strategies. Deepening the creativity related feedback she looks into feedback valence (positive or negative outcome of the comparison between an individual's creativity and normative or situational criteria) and characteristics of the feedback recipient and the feedback provider.

Model of effects of feedback on creativity

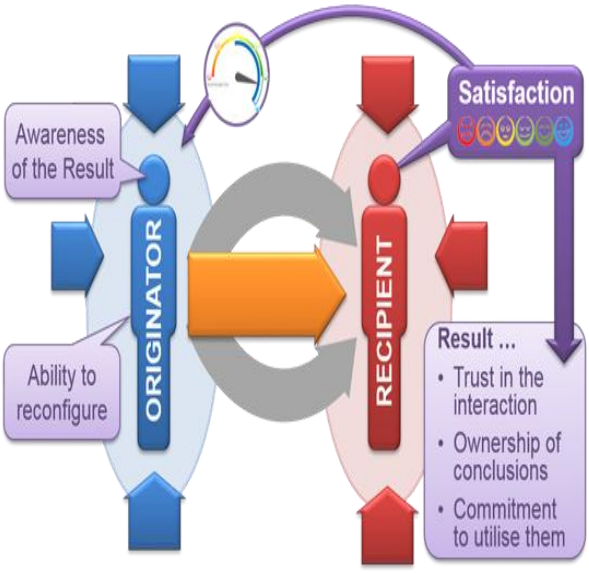
In figure 1a mentioned as the skills/expertise of the feedback provider

Much of the recent research on creativity from Amabile (1996) has relied on an intrinsic motivation framework. In her model on effects of feedback on creativity Zhou (2008) explored the psychological process (intrinsic motivation, mood states, understanding of standards, and acquisitions of skills and strategies), the nature of the feedback (valence and style, development orientation and person-focused verses task-focused), characteristics of the feedback recipient (i.e., achievement motivation, power motivations and emotional intelligence) and the characteristics of the feedback giver (i.e., knowledge and experience, seniority and status). Zhou (2003) suggests that feedback facilitates the acquisition of creativity-relevant skills. As stated in the componential theory of creativity and innovation, the creative-relevant skills are the building blocks in creativity. In their research Callister et al. (1999), feedback was split into inquiry and monitoring provided by peers and supervisors.

In figure 1a mentioned as message or service from the feedback giver (peer or supervisor), Zhou (1998) defines feedback style as the manner in which the feedback is delivered as informational or controlling. People do not always interpret the feedback they receive in a straightforward style. It depends in which manner it is presented and by whom and how: messages that are high on development orientation providing individuals helpful and valuable information that enables the individual learn, develop and improvement implies that individuals can constantly become better. Feedback that is low on the developmental orientation contains little information to help to be creative and to professionally grow on the job. Fodor and Carver (2000) found, in an interesting study, that individuals respond to negative feedback differently. Individuals with achievement motivation benefited from negative feedback, whereas individuals with power motivation did not benefit. Both individuals with high achievement motivation and high power motivation showed enhanced creativity after receiving positive feedback. In figure 1b mentioned as feedback recipient (of the feedback). The feedback giver and the feedback recipient are involved in the psychological process including the message and the variation/enactment – selection – retention with the built in feedback loops. Feedback is inquired as well as monitored from everyone including the peers and supervisors. In figure 1 mentioned as readiness and openness "research has shown that creative individuals tend to be more flexible in absorbing information, demonstrably higher levels in intrinsic motivation for creativity, and more open to new experiences" (Stobbeleir et al., 2011 page 811).

Figure 1a

Figure 1b



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In their study Callister et al. (1999) split the feedback giver into peers and supervisors and the behavior (Frequency) of the feedback recipient into inquiry and monitoring. In my investigation we will work with this behavior or strategy as a base for questionnaires concerning the split feedback as well as idea selection and information about climate and culture. All the information from the questionnaires is given by the recipients. The recipients will have the variation/enactment – selection – retention with the built in feedback loop as they are filling out the questionnaires. Looking at the stimulants and the obstacles revealed by Amabile and Mueller (2008) feedback can be, amongst other thing, an encouragement and recognition (stimulants) or an evaluation and time pressure (obstacles).

Hypothesis C: Feedback is positively related to idea selection

2.3 Idea selection

Because there has been a limited number of literature into idea selection but there has been more literature on creativity we will look at the connection between idea selection and idea promotion/idea selection, idea selection and the innovative work behavior and idea selection and perceived organization support.

Independent variable Idea promotion and idea implementation = Innovative Work Behavior (IWB) With the stages openness, selection/adaption and realization of the idea selection questionnaire is related to idea promotion and idea implementation. In this questionnaire of idea promotion and idea implementation, the recipient can state the sense making in promoting and implementing ideas. Stimulants and obstacles in the work environment can have an effect on the relation. In the article by De Jong and Den Hartog (2010) titled “Measuring Innovative work Behavior” it is concluded that both scientists and practitioners emphasize the importance of innovative work behavior (IWB) of individual employees for organizational success, but the measurement of IWB is still at an evolutionary stage. This article is concerned with developing a measure of IWB with four potential dimensions: the exploration, generation, championing and implementation of ideas. Although IWB is theoretically treated as multi-dimensional, available measures of IWB are mostly one-dimensional (e.g., Scott & Bruce, 1994; Reuvers et al., 2008), Also the empirical evidence for the validity of IWB measures is limited. Most studies relied solely on single source data, where individual employees provide the ratings of IWB as well as its correlates. IWB differs from employee creativity – the production of new and useful ideas concerning products, services, process and procedures – because it also includes the implementation of ideas. Unlike creativity, IWB is explicitly intended to provide

some kind of benefit. It has a clearer applied component and is expected to result in innovative output. Creativity can be seen as a crucial component of IWB.

Hypothesis D: Idea promotion and idea realization is related to idea selection

Independent variable Perceived Organization Support (POS)
In their study Diliello, Houghton and Dawley (2011) suggest that researchers have identified a number of environmental stimulants and obstacles to creativity that operate broadly across the entire organizations. Environmental stimulants to creativity include autonomy, good project management, sufficient resources, mechanisms for considering new ideas, recognition that work failures can provide valuable information, appropriate rewards, constructive feedback, and collaboration as part of the organizational culture. It seems likely that perceived organizational support would be affected by diverse aspects of an employee's treatment and would, in turn, influence the employee's references concerning the reasons for that treatment. In their study Amabile et al. (1996a) designed three questionnaires (KEYS Organizational encouragement, Supervisory encouragement and work group support) to measure the support of the organization. Diliello mentions many of the stimulants and obstacles already mentioned by Amabile as described in Appendix A.

One of the most mentioned obstacles of creativity in literature is: Workload pressure (KEYS)
"The conceptual model underlying the development of KEYS is a more detailed and specific articulation of this componential theory". "We developed KEYS because we believe that ,for organizational theory, research, and practice, an instrument based in the organizational literature and tested in organizational setting is most appropriate" (Amabile, et al., 1996a page 1156). Amabile et al. designed this questionnaire to measure an environmental obstacle in creativity. Measuring specific obstacles and stimulants is beyond the scope of the thesis.

2.4 Climates and cultures for innovation

From the study of West & Richter (2008) we can learn that organizations can be described in terms of their cultures – meanings, values, attitudes and beliefs. Surface manifestations of culture include hierarchy, pay levels, job descriptions, internal practices such as norms, espoused values and rituals, stories, jokes, jargon and physical environment.

About the private banking industry:
From the McKinsey global private banking survey 2013: Since 2008, however, the industry has faced a series of challenges related to the sharp increase in the volatility of capital markets, the low-rates environment, and the increasing scope of regulation in the US, Europe and elsewhere. The impact of these factors mean that profitability of most private banks is far below the levels before the financial crisis. What some industry observers were describing as cyclical changes have now become structural, hence requiring significant changes to traditional business models.

About the organization:
The goal of the organization is to be a trusted partner for their clients adding value to their securities portfolio. For organizations changes in the business model require creativity and innovation. In the future more challenges in the private banking industry are expecting requiring more innovation and creativity.

This study focusses on four antecedents of idea selection. The climate and culture measuring is measuring the external component in the componential theory of creativity and innovation. In the variation/enactment – selection – retention process the external component is part of the feedback loop. Recipients in this and other organizations in the private banking industry might benefit from insight in the antecedents of idea selection.

3 Methodology

The model "antecedents of idea selection" will be tested using (Field, Miles & Field, 2012), the independent feedback questionnaire from Callister et al. (1999), creative-relevant process of the conceptual model and the dependent variable idea selection (questionnaire Heidi Lenaerts = creative cognitive processing) in a single time correlation study in a small private bank. The climate and culture of the organization will be measured with the questionnaires Creative Work Innovation (CWI), Perceived Organization Support (POS), Innovative Work Behavior (IWB), Workload pressure (KEYS) and Issue selling that were provided by Heidi Lenaerts, for which I am grateful.

3.1 Method of research

The method used in the study is the single-time correlation study. In her review Amabile and Mueller (2008) describe, in table 1, the methods and descriptions with examples and when they are most useful and when they are least useful.

Table 1: Methods of studying organizations

Method & Description	most useful for	least useful for
Experiments	determine causal influences	capturing complexity
Single-time correlational	determine relationship	discovering new influences
Longitudinal correlation	determine relationships	discovering new influences
Small-sample longitudinal	discovering new influences	determine relationships
Large-sample hybrid	discovering new influences	testing causal relationships

Because we determine the relationship between the existing antecedent feedback and idea selection in a complex organizational environment, a single-time correlation study or a longitudinal correlation study can be made. Due to the time and costs involved, a single-time correlation study will be done.

The questionnaires

On the 30th November 2014 the latest questionnaires were received

Table 2: questionnaires with likert scale description

Idea Selection	20 questions	5 Likert scale	totally not applicable (1) to totally applicable (5)
Creative work involvement	9 questions	7 Likert scale	never (1) to always (7)
Issue selling	6 questions	5 Likert scale	totally not applicable (1) to totally applicable (5)
Innovative Work Behaviour (IWB)	6 questions	7 Likert scale	never (1) to always 7)
Perceived Organization Support (POS)	8 questions	5 Likert scale	strongly disagree (1) to strongly agree (5)
Workload pressure(KEYS)	5 questions	5 Likert scale	strongly disagree (1) to strongly agree (5)
Work hours	2 questions		nominal > or equal to 0 hours

The Creative work involvement, Issue selling, Innovative Work Behaviour (IWB), Workload pressure(KEYS), Workload pressure(KEYS)and Work hours will measure the Climates and cultures for innovation of the organization.

The general information which is required is measured with a categorical variable (age and education) and a binary variable (gender) and leadership (yes or no).

The difference in inquiry and monitoring feedback (peer and supervisor) and the idea selection is measured with the Spearman's correlations coefficient due to the non-normally distributed data. The non-parametric Spearman's test work by first ranking the data .

- Correlation peer feedback inquiry Idea Selection
- Correlation peer feedback monitoring Idea Selection
- Correlation supervisor feedback inquiry Idea Selection
- Correlation supervisor feedback monitoring Idea Selection

Language English

Understanding English might not be an issue in this organization, however the questionnaires being in English could decrease the response rate.

Procedure approval

Prior to the distribution of the questionnaires the supervisor of the thesis Prof. dr. M.C.J. Caniëls and the developer of the idea selection questionnaires Heidi Lenaerts were asked to provide comments and suggestions on the procedures.

Ecological validity

We will perform a correlation or cross-sectional research on a single point in time using questionnaires. The author uses already validated questionnaires and a new to be tested questionnaire (e.g. idea selection from Heidi Lenaerts) to avoid bias from the researcher. This is an important aspect of ecological validity.

Standardized Likert scales

Due to the Likert scales of 5 items, which are used for the dependent and independent variables, the measurement scale is standardized with the exception of the Creative work involvement and Innovative Work Behavior which is 7 items. Due to the Blinker system the questionnaire Perceived Organization Support could only be implemented in a Likert scale of 5 item.

Minimize common method bias

To minimize common method bias the following procedural remedies were undertaken:

1. The correspondents anonymity was protected, respondents were assured that there are no right or wrong answers, and they were urged to answer questions as honest as possible (Podsakoff, MacKenzie, Lee & Podsakoff, 2003).
2. Several questions were reverse coded, reducing the threat of respondent "guessing", which is one possible source of common method variance, together with social desirability (Malhotra, Kim & Patil, 2006).
3. The questionnaires only contain 71 items, therefore it was short enough to avoid boredom and fatigue, which might shift the cognitive effort of respondents away from accuracy to response speed (Yu & Cooper, 1983).

Bias in organization

The author has only responded to questions and remarks in the organization. There has been no effort to increase the responding rate through asking. Because the author has his network in the organization asking for questionnaires could have the effect that only part of the organization members were additionally motivated to fill out the questionnaires.

Mean

The mean is a simple statistical model and the outcome must be interpreted carefully. The standard deviation (appendix B) is an indication of the fit of the representation of the mean. The figures in appendix B indicate that most of the standard deviation is relatively high compared with the mean. The mean therefore is not a good representation of the data.

Response rate

A study was conducted by Baruch (1999) to explore what could and should be a reasonable response rate in academic studies. One hundred and forty-one papers which included 175 different studies were examined. They were published in the Academy of Management Journal, Human Relations, Journal for Applied Psychology, Organizational Behavior and Human Decision Processes, and Journal of International Business Studies in the years 1975, 1985, and 1995, covering about 200.000 respondents. The average response rate was 55.6 with a standard deviation of 19.7.

Cronbach Alpha

For academic credibility, integrity, and professionalism, Baruch (1999) used norms to establish what is publishable and what not. For example when we measure work attitudes using several items we are expected to report the Cronbach alpha. (e.g. .7 or .8 should raise no objections; .4 will not be acceptable; .9 or above will raise the question of possible similarity among the items).

3.2 Data collection

Survey and population

In January 2015 the data for this study was collected from a Dutch private bank with 201 employees. The response on this survey was 26 % (52 respondents). After removing the questionnaires with incomplete or inconsistent answers there were 30 valid questionnaires. The population has 44 female (22%) and 157 male (78 %) respondents. In the annual report 2013 of the Dutch society of banks (www.nwb.nl), from the 87.000 employees 48 % was (2013) female. The data was collected to investigate four antecedents of idea selection. Introducing the questionnaires, the purpose of the survey was stated and the anonymity and confidentiality was assured.

Sample size

The sample size of 30 will have effects on the statistics. The reliability of the analyses depends on the factor sample size. The common rule which is often used, speaks of 10 – 15 participants per variable.

Demographic table

Demographical analyses are in age, education and leader.

Variables

Idea Selection is measured on a 20 items scale, measuring the aspects openness (7 items), selection/adoption (7 items) and realization (6 items). In the definition of Anderson et al. (2014) the creativity and innovations at work process, and the way things are done are mentioned. The items are measured on a 5 point Likert scale. Examples are “my manager/supervisor is open to my ideas” and “I see my ideas reflected in the work that we do”. The questions in the questionnaire are mixed to avoid boredom and fatigue. Question 8, 14, 16 and 20 was reversed coded. The Cronbach’s alpha for these new questionnaires will be determined by testing them in several organizations.

Creative work involvement is measuring,on a 9 items scale, the behavior of the respondents in ideas, methods, risk taking, solving problems, identifying opportunities, operable work related ideas, role model and revolutionary ideas. The items are measured on a 7 point Likert scale. Examples are "I took risks in terms of producing new ideas in doing job" and "I served as a good role model for creativity". The Cronbach's alpha for these new questionnaires will be determined by testing them in several organizations.

Issue selling is measured on a 6 items scale, measuring the Issue selling willingness (3 items "how much") and issue selling credibility (3 items). The how is related to the effort, energy and time that is devoted to selling the issue in the organization. The credibility is related to the track record, success and be known as a successful issue seller. The items are measured on a 5 points Likert scale. The Cronbach's alpha for these new questionnaires will be determined by testing them in several organizations.

Feedback is measured on an 11 items scale, measuring the aspects feedback inquired from peers (4 items), feedback by monitoring peers (3 items), feedback inquired from supervisors (2 items) and feedback monitored from supervisors (2 items). Reason for the study of Callister et al. "We examined how inquiring and monitoring for feedback from peers and supervisors changed over time for transferees. Results from a longitudinal study in which data were collected three times over a year indicated that monitoring for feedback from peers and supervisors remained constant over time, as did inquiry from supervisors, but that inquiry from peers declined. In addition, role clarity negatively influenced subsequent peer inquiry" (Callister et al., 1999 page 429). The items are measured on a 5 point Likert scale. The Cronbach's Alpha from the Callister et al.. study was .76 until .92.

Innovative Work Behavior (IWB) is measured on a 6 items scale, measuring idea promotion (3 items) and idea realization (3 items). Idea promotion is to mobilize, acquire and make people enthusiast for innovative ideas. Realization is to transform, introduce and evaluate applications and ideas. The items are measured on a 7 point Likert scale.

Perceived Organization Support (POS) is measuring, on an 8 items scale, the support provided from (the members of) the organization (Eisenberger, Huntington, Hutchison & Sowa, 1986). The questionnaire was developed by Robert Eisenberger et al. with 36 questions and was tested on 9 organizations with the total of 361 employees. A number of items were retained for the short version of the survey. In Eisenberg's questionnaires the Cronbach's alpha is from .76 until .84. The items are measured on a 5 point Likert scale.

Work pressure (KEYS) is measuring, on a 5 items scale, the pressure on creativity in organizations. Amabile (1996) developed the questionnaire to measure a possible obstacle for Creativity. The Cronbach from the Amabile's study was .77.

Workload Hours is measuring, on a 2 items scale, the hours and overtime in a typical week.

Age is measured in periods of years. 5 groups are made in the population: Younger than< 25 years (7 persons) , 25 – 34 years (27 persons) , 35 – 44 years (72 persons) , 45 – 54 years(72 persons) and older than > 55 years (23 persons). Some of the participants involved started at in the organization at the age of 16. The groups are divided in periods of 10 years and are comparable.

Education is measured in levels. 3 groups are made: MBO or lower, HBO (bachelor) and University (master). From the requirements of the functions from 162 persons the level could be identified (MBO 37 persons, HBO 44 persons and University 81 persons).

Leader is measured in levels: 2 groups are made: Directors, managers and supervisors are called supervisors (34 persons) and the other peers (167 persons).

3.3 Operationalization

Idea selection is part of the field of organizational creativity. Idea selection is considered in this study as an outcome and will be tested for the correlation with four antecedents.

The questionnaires from Heidi Lenaerts are based on her work: **"** the theme of my PhD paper includes acquiring a better understanding of the underlying mechanisms of the interest to the individual creativity in the workplace."

I have chosen the questionnaires because:

1. All data for all the questionnaires are from the same source – the recipient
2. Antecedents have a relation with creativity in general and Idea selection specifically
3. The questionnaires provide data for answering the questions

Table 3. Operationalization of factors, items and sources

Factors	Item	sources
Dependent factor Idea Selection (IS)	Creative outcome	Lenaerts (2014)
Independent factor Creative work involvement	work environment	Lenaerts (2014)
Independent factor Issue selling	work environment	Lenaerts (2014)
Independent factor Feedback-Seeking Scales	outside component	Callister et all.(1999)
Independent factor Innovative Work Behavior (IWB)	work environment	Lenaerts (2014)
Independent factor Workload Pressure (KEYS)	work environment	Amabile et all.(1996)
Independent factor Perceived Organization Support (POS)	work environment	Lenaerts (2014)

3.4 Data-analysis

After the questionnaires were received in excel sheets the data were registered in SPSS and were processed according to the procedure in appendix D.

3.5 Methodological issues

The results of this study should be viewed with limitations and methodological issues in mind. In the software Blinker, which is used in the organization and for this study, there is no restriction of answers. This means that recipients can forget to answer questions or can give more than one answer. If this happens the questionnaires are considered invalid. Some of the members of the organization have little experience with filling out questionnaires. This might decrease the number of returned questionnaires.

4. Results

Table 4: Valid questionnaires/participants

Cases Valid	30	100%
Based on the N = 201 (appendix c) response =		14.9 %

Gender and leaders (appendix c):

The outcome of the recipients of the questionnaires are: 7 female and 23 male. 23 peers and 7 supervisors. Based on the difference in the age group (appendix c) between the population and the respondents from the questionnaire, the conclusion is made that the respondents are not representative for the population. The outcome of the questionnaire is therefore not representative for this organization.

4.1 Cronbach's alpha, means, standard deviation and correlation

Table 5: Means, Standard deviation for independent, dependent and demographic variables: With scale of the questions

	Mean	Std. Deviation	Scale
What is your age?	3,6667	,95893	(1) <25,(2) 25 – 34,(3) 35 – 44,(4) 45 -54,(5) > 55
What is your highest completed education?	2,1333	,68145	(1) MBO or less, (2) Bachelor,(3) University
Idea selection	3.7933	,60937	1 – 5. Average mean of scale = 3
Creative work involvement	4.5037	,96720	1 – 7. Average mean of scale = 4
Issue selling	3.6276	,63530	1 – 5. Average mean of scale = 3
Feedback	3.1969	,42712	1 – 5. Average mean of scale = 3
Innovative work behavior	4.1388	1,18020	1 – 7. Average mean of scale = 4
Work pressure	3.3200	,85274	1 – 5. Average mean of scale = 3
Perceived organization support	3.5500	.56819	1 – 5. Average mean of scale = 3

Average age of the participants is 41,67 years. Average education of the participants is between bachelor and university. The means of the participants for all independent and dependent factors are higher than the average means of the scale.

Table 6: Means in independent feedback (average mean is 3)

Feedback inquired from peers	2.592
Feedback inquired from supervisor	3.133
Feedback monitored from peer	3.79
Feedback monitored from supervisor	3.583

In hypothesis B the frequency in feedback seeking from Callister et al.(1999) , for recipients who are not new in that position, from peers were less frequent than from supervisors. Callister referred to the study of Ashford and Cummings that the two feedback strategies (inquiry or monitor) have different costs and benefits. Benefits of monitoring are minimum effort low costs, however it is not always providing the required information. Inquiry can obtain required information, however inquiry may be seen as weak or insecure. From the questionnaires we have found that the feedback inquired from peers (2.592) was less frequent than from supervisors (3.133). From the sense making of the world with the Variation/Enactment- selection- retention of Weick's (1979) model feedback from peers and supervisors is one of the equivocal signals from the environment. Feedback will have influence on the internal and external components of the recipient (Amabile, 1996).

Table 7: Cronbach's alpha of the items idea selection, creative work involvement, issue selling, feedback, innovative work behavior, work pressure and perceived organization support.

Cronbach's Alpha	,712	N of items	7

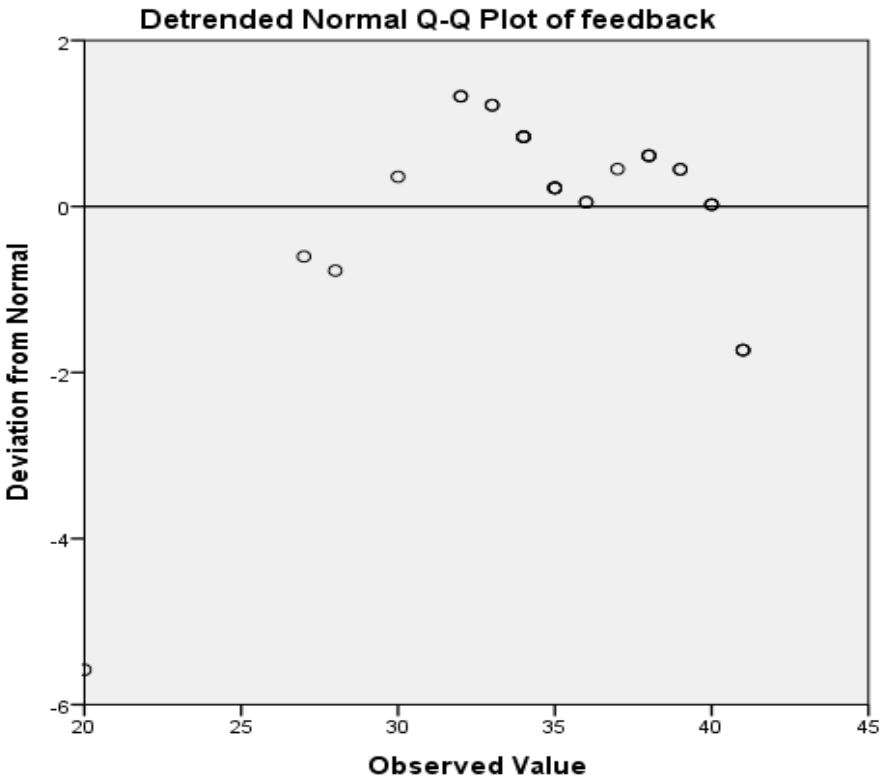
Cronbach's Alpha for individual questions (appendix B)

The Cronbach's Alpha is to measure the ecological validity of the questionnaires. As from .8 the outcome is considered to have reliable coefficients. Only the feedback with .776 was just lower than .8 however will be acceptable for the investigation. Idea Selection with .958 and Innovative Work Behavior with .943 is relatively high. Compared with the expected Cronbach's Alpha (.84, .77 and .77) from the tested questionnaires the Cronbach's alpha are higher (.958, .851 and .871) or equal (.904). Due to the higher Cronbach's alpha from the questionnaires compared with the expected Cronbach's alpha from the selected tested questionnaires, the questionnaires are ecologically valid.

Assumptions of the parametric data:

Statistical procedures like correlations and regressions are based on the normal distribution. The sample distribution should be normally distributed in order to calculate valid correlations.

A Q Q plot should be able to look into the normal distribution:



From the plot the conclusions is made that there are not enough samples to have a normal distribution.

4.2 Non parametric tests

In the previous paragraph the conclusion was made that the number of samples (30) have violated the assumption of having a normal distribution of samples, therefore the non parametric tests must be made.

Most of the non parametric tests works on the principle of ranking the data.

A. Spearman's correlation coefficient (Spearman's rho for short): Spearman's test works by first ranking the data and second applying Pierson equation.

Table 8: Output of the Spearman's rho for our hypotheses:

Spearman's Rho	Correlation Coefficient	Sig. (2 tailed)	Hypothesis
Hypothesis A: Creative work involvement is positively related to idea selection	,594	,001	supported
Hypothesis B: Issue selling is positively related to idea selection	,567	,001	supported
Hypothesis C: Feedback is positively related to idea selection	,162	,392	not supported
Hypothesis D: Idea promotion and idea realization is related to idea selection	,543	,002	supported

Literature suggests that there is a relation between idea selection and feedback, feedback and environment as well as feedback and characteristics of the person. We can compare the populations of the environment, characteristics and the idea selection with the feedback with the sig. of the Mann-Whitney test. The lower the sig. the more similar the populations are.

Environment	**Characteristics of the person**
Perceived Organization Support	Education
Creative Work Involvement	Leader
Issue selling	Age
Innovative work behavior	Gender
Workload pressure	

B. Mann-Whitney test and Kruskal-Wallis test

If the assumption is made that feedback can be divided in two groups with the mean in ranks.

Table 9: Mean of feedback in relation with idea selection

ideaselection

Feedback	Mean	N	Std. Deviation
20,00	3.9	1	.
27,00	4.0	1	.
28,00	3.4	1	.
30,00	3.5	1	.
32,00	4.0	2	9,19239
33,00	2.8	2	31,81981
34,00	2.8	4	9,57427
35,00	4.0	4	5,88784
36,00	3.9	2	6,36396
37,00	2.8	1	.
38,00	3.5	3	14,46836
39,00	3.9	2	,70711
40,00	3.9	3	14,00000
41,00	4.1	3	12,89703
Total	3.7	30	12,18743

A new group feedbackintwogroups is formed based on the mean ranking in combination with idea selection from table 9:

1. Mean < or = 35 14 participants
2. Mean > or = 36 16 participants

The mean of the feedback in relation with idea selection was calculated (table 9) and feedbackintwogroups was formed based on recipients (16) under the mean and recipients (14) above the mean creating an almost even distribution over two groups. The distributions in the groups are, if looked at table 9, not evenly distributed.

Investigating the similarity in population feedback and idea selection with the independent Samples Mann-Whitney U test the sigma is ,854. Because the two groups were formed based on the mean in this relationship , the low similarity was to be expected. From this low similarity we can proceed with testing the differences between several independent groups.

From the literature and from the investigation, based on the small number of questionnaires received, the conclusion can be made that we can concentrated on other antecedents from the environment and the characteristics of the recipients to investigate the role of feedback on idea selection.

Table 10: Ranking the characteristics of recipients: Mann-Whitney test		sig.	decision
Education and feedback	Idea selection	,334[1]	
Leader and feedback	Idea selection	,294[1]	
Age and feedback	Idea selection	,608[1]	
Gender and feedback	Idea selection	,886[1]	

Table 11:Ranking the environment of recipient:	Mann-Whitney test	sig.	decision
Perceived Organization Support and feedback	idea selection	,334[1]	
Innovative Work Behavior and feedback	idea selection	,918[1]	
Issue selling and feedback	idea selection	,822[1]	
Work pressure and feedback	idea selection	,101[1]	consistent
Creative Work Involvement and feedback	idea selection	,951[1]	

Table 12: Ranking the environment of recipients:	Kruskal-Wallis test	sig.	decision
Perceived Organization Support and feedback	idea selection	,316[1]	
Innovative Work Behavior and feedback	idea selection	,900[1]	
Issue selling and feedback	idea selection	,801[1]	
Work pressure and feedback	idea selection	,095[1]	consistent
Creative Work Involvement and feedback	idea selection	,934[1]	

[1] Exact asymptotic significance is displayed for this test. The significance level is ,05

Comparing the feedback with the environment we can see that the populations of the innovative work behavior, issue selling and creative work involvement are not similar and that the hypothis C is unsupported.

5. Conclusions, Discussions and implications

5.1 Conclusions

The research purpose was to investigate four antecedents of idea selection. The main theory was the componential model of creativity and innovation, the variation/enactment – selection – retention model and the model of effects of feedback on creativity. The methodology was a single time correlational case study with hypotheses to determine the relations between antecedents.

We have found a positive and significant relation for hypothesis A between creative work involvement and idea selection. Previous studies investigated the relation between creative work involvement and creativity, which is less specific than idea selection. For instance Amabile et al. (1996a) refers to the organizational and supervisory encouragement and the work group support both for creativity, encouragement for risk taking and idea generation from the highest to the lowest level of the organization. Deci and Ryan (1985) stated that supportive, informative evaluation can enhance the intrinsically motivational state to creativity. Other authors i.e. Anderson et al. (2014) refer to a climate of supportive and innovative psychological safety is conductive of organizational-level innovation. In their case study Amabile et al.(1996a) found that high creativity projects were generally rated higher on KEYS scales proposed as stimulants to creativity.
Hypothesis A is supported/confirmed in literature and case studies.

We have found a positive and significant relation for hypothesis B between issue selling and idea selection. Previous studies investigated the relation between issue selling and creativity, which is less specific than idea selection. For instance "…..the relation between personality and creativity is complex, which is shaped by contextual factors" (Anderson et al., 2014 page 1303). In his work Weick (1979) refers to the feedback loop in the variation/enactment – selection – retention model. In their study Dutton et al. (2001) refers to the "feel" of the game and Amabile, et al. (1996a) to the way we do our work. In their case study De Jong and Den Hartog (2010) found a positive relation between idea championing (= issue selling) and Innovative work behavior.
Hypothesis B is supported/confirmed in literature and in case studies.

We have found a weak relation for hypothesis C between feedback and idea selection. Previous studies investigated the relation between feedback and creativity, which is less specific than idea selection. For instance Stobbeleir et al. (2011) found that feedback inquiry had a direct, positive

relation with creativity. Zhou (2008) found the characteristics of the feedback recipient, the feedback giver and the message itself together in the psychological process which leads to the creative outcome. In their study, Callister et al. (1999) conclude that inquiry from peers for recipients is lower than from supervisors. Both studies find a positive relation between feedback seeking behavior and feedback. In our study the relation from the Spearman's rho is lower than expected from the literature. Because the thesis investigates the model "antecedents of idea selection" the relation feedback and idea selection was reexamined by comparing the population of different independent groups. Hypothesis C is not confirmed in the literature and case studies and will be reexamined with the Mann-Whitley and Kruskal-Wallis statistical model.

We have found a positive and significant relation in hypothesis D between idea promotion and idea realization and idea selection. Previous studies investigated the relation between idea promotion and idea relation and creativity, which is less specific than creativity. For instance according to De Jong and Den Hartog (2001, both scientists and practitioners emphasize on the importance of Innovative Work Behavior (idea promotion and realization) for organizational success. In their case study, De Jong and Den Hartog found a positive relation between idea exploration, idea generation, idea implementation and innovative work behavior.
Hypothesis D is supported/confirmed in literature and in case studies.

The relation of feedback with idea selection is investigated. The related hypothesis C is not supported however literature does support the hypothesis. Comparing the feedback ranked through idea selection with the environment we can see that the populations of the innovative work behavior, issue selling and creative work involvement are not similar and that the hypothesis C is unsupported. The result from this case study was not expected from literature and other case studies.

The key results answering the hypotheses have been summarized and embedded in the literature.

Answers to the sub questions:

1. What is the correlation and non parametric tests of antecedents on idea selection?
The correlation could not be done due to lack of normal distribution. The non parametric Spearman's rho outcome for the creative work involvement, issue selling and idea promotion have a supported relation with idea selection. The non parametric Spearman's rho outcome, for the feedback, was an unsupported relation and the Mann-Whitney outcome comparing the populations confirms the unsupported relation for this case study.

2. What is the climate and culture in the organization for creativity?
The non parametric Spearman's rho outcome indicates a strong relation between climate and culture and idea selection.

3. Antecedents of idea selection. In particular, what is the relationship between idea selection and creative work involvement, issue selling, feedback, idea promotion and idea realization?
Idea selection is about the openness to, selection, adaption and realization of ideas and is part of the organizational creativity field. Idea selection can be measured more in detail than creativity and can be helpful to gain insight in the creativity process From the questionnaires we have found a supported relation between creative work involvement, issue selling, idea promotion and idea selection. Because the relation between feedback and idea selection was weaker than expected from the literature study we made a model connecting feedback and idea selection measuring the similarity of the populations. The outcome of this case study is that the similarity of the populations is low and confirms the outcome of the Spearmans Rho for hypothesis C. For insight coherent models of antecedents can test the relations with idea selection using different antecedents at different organization levels in different models.

5.2 Discussions

Researchers, e.g. Caniëls et al. (2014), suggest that creativity of employees can maintain a competitive advantage for organizations. The authors Dutton et al. (2001) suggest that issue selling requires skills and "feel" for the game. The authors Amabile et al. (1996a) suggest that encouragement and support is important for creativity. According to the Spearman's correlation coefficient there is a relation between independent creative work involvement, independent issue selling, independent idea promotion/realization and idea selection, as could be expected from literature. To determine the strength of the relationships between these antecedents longitudinal studies involving models with different antecedents, more case studies could be made to gain more insight.

For her model, Zhou (1998) explored the nature of feedback, characteristics of the feedback recipient and the feedback giver which leads to a psychological process and a creative outcome. From the literature the feedback has a positive relation with idea selection. In this thesis only the frequency of feedback is measured. The informal or controlling way feedback can be delivered has an effect on the correlation with idea selection. West and Richter (2002) suggest that co-workers and

the team process play a key role in stimulating creativity. In this thesis antecedents of idea selection is investigated. From literature we have found that many antecedents influence creativity. According to Callister et al. (1999) many of the antecedents influence the feedback frequency. Literature suggests that there is a relation between idea selection and feedback, feedback and environment as well as feedback and characteristics of the person. We can compare the populations of the environment, characteristics and the idea selection with the feedback with the sig. of the Mann-Whitney test. The lower the sig. the more similar the populations are.
To determine the strength of the relationships between the antecedent feedback and other antecedents, longitudinal studies involving models with different antecedents in more case studies could be made to gain more insight.

5.3 Implications for organizations

The relation between innovative work behavior, issue selling, creative work environment and feedback is, according to the outcome of this small investigation and the literature, supported. Organizations can measure the innovative work behavior, issue selling and creative work environment over time. With the measurement predictions about idea selections can be made. Based on the outcome of the measurements supervisors can, through leadership and status, provide support and decrease obstacles to improve the climate and culture for idea selection. Looking at the stimulants and obstacles mentioned in appendix A we find that they are in the same area (Amabile et al., 1996a): freedom or constraint, good or poor project management, sufficient or insufficient resources, recognition or evaluation, sufficient time or time pressure and encouragement or disinterest. Peers and supervisors have their own role in guarding the balances in the organization. People work together in organizations and have an interest in a good workable balance in the organization.

The way and frequency feedback is delivered and by whom and the structure and culture of the organization is all helpful to enhance idea selection (creativity. An organization, however, is complex with all the people and their relations, wishes, hopes and many other things involved. There is no certain way to enhance creativity. Enhancing creativity is not a goal in itself. The main purpose of an organization is continuity. Supervisors and peers can recognize and reward workable ideas. The evaluating systems incorporated in organizations worldwide could play key role in recognizing and rewarding. Enhancing creativity might improve the continuity of organizations. Making sense of the equivocal bits of information floating in organizations is difficult enough. Think about the poem of John Godfrey Saxe: The blind men and the elephant . Add individual experience, character, interests

and emotions. Add the history, climate and culture of the organization. Add information and events from the outside world. In this melting pot creative ideas are being found, discussed, evaluated and incorporated in the organization. In a rapidly changing world workable ideas can be a necessity for the continuity of organizations. Further investigating the antecedents of creativity can help supervisors and peers to improve insight in the creative process and might increase the possibility of the continuity of organizations.

5.4 Limitations of this study and recommendations for further research

The main limitation of this study is the number of valid questionnaires received. With a sample of 30 all outcome must be looked at most carefully. The limitation of the study is the questionnaires which only request the opinion of the recipient even if these recipients are peers or supervisors. Interesting would be if the frequency of the feedback, the creative work involvement, issue selling and issue promotion is different from the feedback givers point of view. More research on the influences of the work environment on the antecedents in relation with idea selection can provide more knowledge to the organization to improve the climate for generating, selecting and implementing workable ideas.

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Appendix A : Environment stimulants and obstacles to creativity

(Amabile , 1996) revealed 9 qualities of environment that serve to promote (stimulants) or to inhibit (obstacles) creativity. In several research the qualities have been confirmed

Environmental stimulants to creativity

- Freedom: Freedom in deciding what to do or how to accomplish the task; a sense of control over one's own work and ideas
- Good project management: a manager who serves as a good role model, is enthusiastic, has good communication skills, protect the project team from outside distractions and interferences, matches tasks to workers' skills and interests, and set a clear direction without managing too tightly.
- Sufficient resources: access the necessary resources, including facilities, equipment, information, funds, and people.
- Encouragement: management enthusiast for new ideas, creating an atmosphere free of threatening evaluation.
- Various Organizational Characteristics: a mechanism for considering new ideas, a corporate climate marked by cooperation and collaboration across levels and divisions, an atmosphere were innovation is prized and failure is not fatal.
- Recognition: a general sense that creative work will receive appropriate feedback, recognition, and reward.
- Sufficient Time: time to think creatively about the problem, to explore different perspectives rather than having to impose an already-determent approach.
- Challenge: a sense of challenge arising from the intriguing nature of the problem itself or its importance to the organization (internalized by the individual as a personal sense challenge).
- Pressure: a sense of urgency that is internally generated from competition with outside organizations or from a general desire to accomplish something important.

Environmental obstacles to creativity

- Various Organizational Characteristics: inappropriate reward systems in the organization: excessive red tape; a corporate climate marked by a lack of cooperation across divisions and levels; little regard for the innovation in general.
- Constraint: lack of freedom in deciding what to do or how to accomplish the task: a lack of sense of control over one's own work and ideas.
- Organizational disinterest: a lack of organizational support, interest, or faith in a project; a perceived apathy towards any accomplishments coming from the project.
- Poor project management: a manager who is unable to set clear direction, who has poor technical of communication skills, who controls too tightly, or who allows distractions and fragmentations of the team's effort.
- Evaluation: inappropriate or inequitable evaluation and feedback systems, unrealistic expectations: an environment focused on criticism and external evaluation.
- Insufficient resources; a lack of appropriate facilities, equipment, materials, funds or people.
- Time pressure: insufficient time to think creatively about the problem; too great a work load within a realistic time frame; high frequency of "firefighting"
- Overemphasis on status quo: reluctance of managers or coworkers to change their way of doing things; unwillingness to take risks.
- Competition: interpersonal or intergroup competition within the organization fostering a self-defense attitude.

Appendix B: Item scales

The questionnaires

Measure (on a five point scale)	Cronbach[1 2]	Mean	SD
Dependent factor Idea Selection (IS) "To which extent are the following statements applicable to your situation?"	.958 (.84)		
Openess	.919	4.014	
1. My manager / supervisor is enthusiastic about my ideas.		3.73	0.868
2. My manager / supervisor is open to my ideas.		4.1	0.845
3. My manager / supervisor is willing to listen when I have a new idea.		4.1	0.923
4. My manager / supervisor makes time to listen to my ideas.		4.0	0.643
5. I can discuss my ideas with my manager / supervisor.		4.3	0.596
6. My manager / supervisor is indifferent to my ideas. (R)		3.97	0.809
7. My manager / supervisor pays attention to my ideas.		3.9	0.712
Selection/Adoption	.877	3.781	
8. My manager / supervisor takes over my ideas.		3.63	0.89
9. My manager / supervisor follows my ideas.		3.63	0.765
10. My manager / supervisor ignores my ideas. (R)		4.33	0.711
11. My manager / supervisor picks out my ideas to elaborate them.		3.53	0.819
12. My manager / supervisor rejects my ideas. (R)		3.97	0.765
13. My manager / supervisor selects my ideas.		3.27	0.785
14. My manager / supervisor disregards my ideas. (R)		4.1	0.923
Realisation .	.911	3.55	
15. You can find my ideas in the daily work of my department.		3.77	0.971
16. You can find my ideas in the work approach		3.57	1.006
17. My colleagues work with my ideas.		3.77	0.568
18. Some of my ideas are implemented in the company.		3.8	0.887
19. A lot of my departments work is based on my ideas.		2.87	0.937
20. I see my ideas reflected in the work that we do.		3.53	0.86
Independent factor Perceived Organisation Support (POS)[c]	.851 (.77)	3.55	
21. The organization values my contribution to its well-being.		3.8	0.761
22. The organization fails to appreciate any extra effort from me. (R)		3.1	0.995
23. The organization would ignore any complaint from me. (R)		3.67	0.711
24. The organization really cares about my well-being.		3.77	0.935
25. Even if I did the best job possible, the organization would fail to notice. (R)		3.53	0.776
26. The organization cares about my general satisfaction at work.		3.63	0.765
27. The organization shows very little concern for me. (R)		3.37	0.718
28. The organization takes pride in my accomplishments at work.			
Independent factor Issue Selling "How much…"	.881	3.628	
Issue selling willingness	.861	3.744	
29. effort would you be willing to devote to selling this issue in your organization?		3.73	0.868
30. energy would you be willing to devote to selling this issue in your organization?		3.83	0.747
31. time would you be willing to devote selling this issue in your organization?		3.67	0.661

Measure (on a five point scale)	Cronbach[1 2]		Mean	SD
"To which extent are the following statements applicable to your situation?"				
Issue selling credibility	.898		3.51	
32. I have a positive track record for selling issues.			3.63	0.809
33. I have been successful in the past in selling issues in organizations.			3.7	0.794
34. I am known as a successful issue seller.			3.2	0.925
Independent factor Workload Pressure (KEYS)[d]	.871(.77}		3.32	
35. I feel a sense of time pressure in my work.			3.7	0.988
36. There are unrealistic expectations for what people can achieve within our company			3.17	1.177
37. There are too many distractions from project work within our company.			3.4	1.07
38. I have sufficient time to do my project(s).(R)			3	0.947
39. I have too much to do in too little time.			3.33	1.061
Independent factor Feedback-Seeking Scales [e]	.776		3.197	
1. How do recipients experience by feedback inquired from peers?	.763		2.592	
40. I ask my coworkers if I am doing a good job		(.89)	2.8	0.805
41. I ask my coworkers if I am meeting my job requirements		(.86}	2.47	0.86
42. I ask my coworkers if people like working with me		(.80}	2.73	0.785
43. I ask my coworkers what other people thing I should be doing		(.78)	2.37	0.809
2. How do recipients experience by feedback by monitoring peers?	.683		3.79	
44.From their reactions, I can tell how well I am getting along with members of my work group		(.86)	4.0	0.525
45. Because of the reactions I receive from my coworkers , I can tell whether I am doing the things that should be done.		(.83)	3.7	0.535
46. Through observing my coworkers'reaction , I can tell how well they think I am doing.		(.79)	3.67	0.661
3. How do recipients experience by feedback inquired from supervisors?	.964		3.133	
47. I ask my supervisor how I am doing		(.92)	3.17	0.95
48. I ask my supervisor if I am meeting all my job requirements		(.91)	3.1	0.995
4. How do recipients experience by feedback by monitoring supervisors?	.646		3.583	
49. From watching my supervisor, I can tell how well I am performing my job		(.88)	3.77	0.679
50. From watching my supervisor's reaction to what I do, I can tell how well my supervisor thinks I am doing.		(.86)	3.4	0.724

Measure (on a seven point scale)	Cronbach[1] [2]		Mean	SD
"Please indicate how often the following statements characterize your behavior in the past year."				
Dependent factor Creative work involvement	.904	(.91)	4.504	
51. I demonstrated originality at my work.			4.7	1.264
52. I took risks in terms of producing new ideas in doing job.			4.73	1.337
53. I found new uses for existing methods or equipment.			4.6	1.329
54. I solved problems that had caused other difficulty.			5	1.339
55. I tried out new ideas and approached to problems			4.8	1.126
56. I identified opportunities for new products/processes.			4.47	1.408
57. I generated novel, but operable work-related ideas.			4.3	1.368
58. I served as a good role model for creativity.			4.47	1.137
59. I generated ideas revolutionary to our field.			3.47	1.252
Dependent factor Innovative Work Behaviour (IWB)	.943		4.139	
"Indicate how often:"				
Idea promotion	.878		4.178	
60. I mobilize support for innovative ideas.			4.3	1.368
61. I acquire approval for innovative ideas.			4.1	1.213
62. I make important organizational members enthusiastic for innovative ideas			4.13	1.46
Idea realization	.900		4.1	
63. I transform innovative ideas into useful applications.			4.27	1.388
64. I introduce innovative ideas into the work environment in a systemic way.			3.9	1.269
65. I evaluate the utility of innovate ideas.			4.13	1.383
Work hours				
66. How many hours do you work in a typical week, including paid breaks but excluding lunch and overtime?				
67. How many hours of overtime do you work in a typical week?				

[1] Cronbach Alpha from questionnaires
(2) Cronbach alpha from original questionnaires

Appendix C: Participants in population and valid questionnaires (response)

Response rate

Population (N)	:	201
completed questionnaires were returned anonymously	:	52
Removing all responses containing incomplete or ambiguous answers resulted in valid responses	:	30
The response rate for completed questionnaires	:	14.9%

Population (N) and distribution of questionnaires*:*

Table 4A: Gender

	2.1.15 Population	Percentage	19.1.15 Response	Percentage
Female	44	21.89 %	7	23.3 %
Male	157	78.11 %	23	76.7 %
Total	N = 201	100 %	30	100 %

Table 4B: Age groups

	2.1.15 Population	Percentage	19.1.15 Response	Percentage
< 25 year	7	3.48 %	1	3.3 %
25 – 34 year	27	13.44 %	1	3.3 %
35 – 44 year	72	35.82 %	11	36.7 %
45 – 54 year	72	35.82%	11	36.7 %
> 55 year	23	11.44 %	6	20 %
Total	N = 201	100 %	30	100 %

Table 4C: Leader

	2.1.15 Population	Percentage	19.1.15 Response	Percentage
No	167	83.08 %	23	76.7 %
Yes	34	16.92 %	7	23.3 %
Total	N = 201	100 %	30	100 %
Education	*2.1.15* Population	Percentage	19.1.15 Response	Percentage
MBO or less	37	23 %	5	16.7 %
Bachelor	43.5	26 %	16	53.3 %
University	81.5	51 %	9	30 %
Total	N = 162*	100 %	30	100 %

N = 162* instead of N 201:
only part of populations could be related to their education in the job descriptions

Appendix D: Data-analysis

1. All data will be received from the organization in an excel data file
2. The data will be examined per recipient for completeness
3. If the data is complete an excel file with the complete data is made
4. The sub questions of the questionnaires were codes for SPSS
   A. IDOS Idea Selection Openness
   B. IDRA Idea Selection Realization
   C. IDSA Idea Selection Selection
   D. ID Idea Selection (IDOS, IDRA and IDSA)
   E. POS Perceived Organization Support
   F. CWI Creative Work Involvement
   G. IS Issue selling (Issue and issuesc)
   H. ISSUE Issue Selling Willingness
   I. ISSUESC Issue Selling Credibility
   J. IWB Innovative Work Behavior (IR and IWB)
   K. IR Idea Realization
   L. IP Idea Promotion
   M. WP Workload Pressure
   N. WH Workload Hours
   O. FS Feedback
   P. FSCI Feedback peers inquiry
   Q. FSCM Feedback peers monitoring
   R. FSSI Feedback supervisors inquiry
   S. FSSM Feedback supervisors monitoring
   T. ZAGE Age
   U. ZEDUCATION Education
   V. ZGENDER Gender
   W. ZLEADER Supervisor/manager
5. The questions are put in the order of the original questionnaires (mix is removed)
6. The codes are inputted in SPSS
7. The answers of the questions are inputted in SPSS
8. Cronbach's Alpha is generated per code in SPSS
9. Mean is generated per code in SPSS
10. Standard deviation is generated per factor in SPSS
11. Correlation is generated per factor in SPSS
12. Groups for rank variables are formed for age, gender, education, leader, Idea selection, Perceived Organization Support, Creative Work Involvement, Issue selling and Workload pressure in combination with feedback.
13. Non parametric test Mann-Whitney test is made for the groups of sub 12 with the idea selection.
14. The results of sub 10, 11 and 13 are analyzed.